

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number  
**WO 2005/031314 A1**

(51) International Patent Classification<sup>7</sup>: **G01N 3/00**

(21) International Application Number:  
PCT/IT2003/000574

(22) International Filing Date:  
26 September 2003 (26.09.2003)

(25) Filing Language: Italian

(26) Publication Language: English

(71) Applicant (for all designated States except US):  
C.I.S.A.M. S.A.S. DI A ERNST E C. [IT/IT]; Via  
Monte Tagliaferro, 6, I-21056 Induno Olona VA (IT).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ERNST, Alfred**  
[CH/CH]; Via Campo Marzio, 11, I-6900 Lugano (CH).

(74) Agents: **PELEGRI, Alberto** et al.; c/o Società Italiana  
Brevetti S.p.A., Piazza Repubblica, 5, I-21100 Varese (IT).

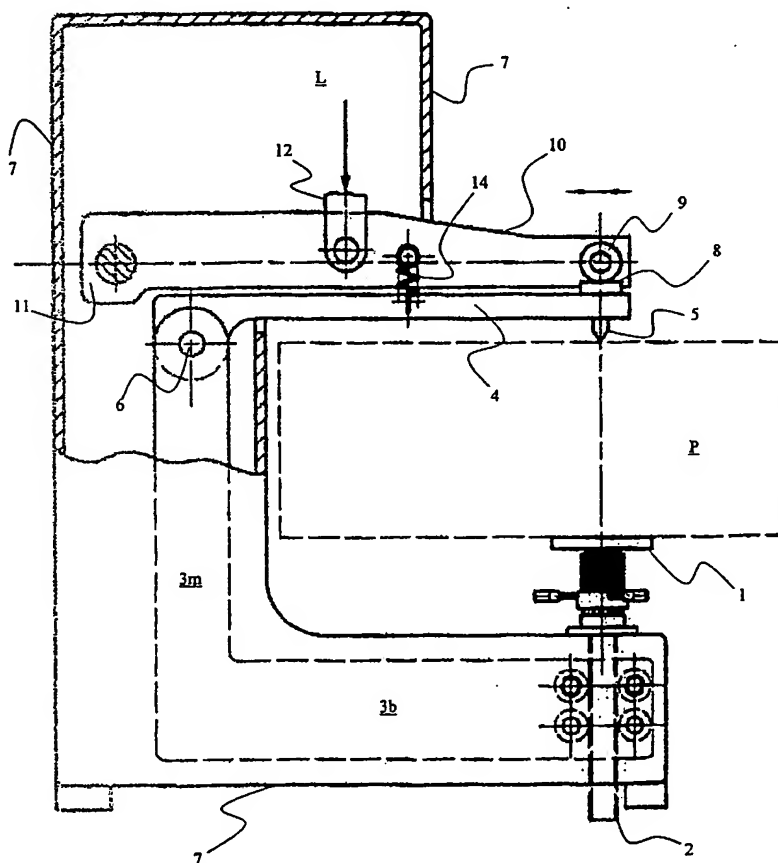
(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

[Continued on next page]

(54) Title: **HARDNESS TESTER WITH A LOADING STRUCTURE OF THE INDENTER INDEPENDENT OF THE STRESS FRAME CONNECTING THE INDENTER TO THE ANVIL**



(57) Abstract: A hardness tester of a relatively large "cantilevering" and/or designed for permitting application of relatively large loads to the indenter may be constructed in a much slander and lighter manner by employing a loading mechanism based on the use of a second or auxiliary loading arm pivotally anchored to the frame of the tester and therefore completely independent of the stress structure of reference contained in the frame of the tester, which mechanical connects the anvil, on which the test object is placed, to the indenter. The load, applied to said second auxiliary arm is transmitted to the indenter carrying arm of the reference stress structure of the tester by unrestrained abutment of a rolling bearing solidly mounted on one of the two arms on a surface of the other arm. Along the trajectory of movement of the tip of the indenter toward the anvil.

**WO 2005/031314 A1**



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*